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Cincinnati, Ohio

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By

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REVIEW OF RESEARCH GRANTS PROGRAM OF NATIONAL INSTITUTES OF HEALTH AS RELATED TO RESEARCH IN ENVIRONMENTAL HEALTH

C. C. Ruchhoft*

The purpose of this paper is to review the Public Health Service Research Grants Program as related to research in environmental health to aid those who are interested in applying for grants in this field. The large scale Public Health Service Research Grants Program has been described by Van Slyke (1) and has been in operation for three years. Public Law 410, known as the Public Health Service Act, which was passed in 1944, authorized this program. Section 301 of this law states: "The Surgeon General shall conduct in the Service, and encourage and cooperate with, and render assistance to other appropriate public authorities, scientific institutions, and scientists in the conduct of, and promote the coordination of research, investigations, experiments, demonstrations and studies relating to the causes, diagnoses, treatment, control and prevention of the physical and mental diseases and impairments of man, including studies of water purification, sewage treatment, and the pollution of lakes and streams".

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In carrying out the foregoing program the Surgeon General is authorized to make grants-in-aid to universities, hospitals, laboratories and other public or private institutions and to individuals for such research projects as are recommended by the National Advisory Health Council. The National Advisory Health Council makes recommendations on all research grants except those relating specifically to the fields of cancer, mental health, dental or heart research. Separate Advisory Councils have been provided for each of the above to serve the National Institutes of Health in these fields. The National Advisory Health Council consists of 14 members, 10 of whom are outstanding civilian scientists. The others are ex officio members and they include: the Director of the National Institutes of Health, and one representative each from the Army, the Navy, and the Bureau of Animal Industry of the United States Department of Agriculture.

The Division of Research Grants and Fellowships of the National Institutes of Health was established late in 1945 to administer the Research Grants Program. The fields of medical research were classified into major categories by the Division and special Study Sections made up of consultant experts in 22 categories have been appointed by the Surgeon General. These Study Sections review and make recommendations on the applications for research grants to the National Advisory Health

Council and other National Advisory Councils.

In the fall of 1946 the Sanitation Study Section was organized with subsections on Water and Sewage, Milk and Food, Industrial Hygiene and Air Pollution, and Housing. The name of the Sanitation Study Section was later changed to the Environmental Health Study Section. This Study Section is under the chairmanship of Mr. V. M. Ehlers, Director, Bureau of Sanitary Engineering, Texas State Department of Health and it includes a group of authorities in the field of environmental sanitation from private and public institutions and Federal agencies.

Membership on the National Advisory Health Council and on the various Study Sections is for five years. New members are appointed each year to replace retiring members. The present members of the Environmental Health Study Section are given in a list at the close of this paper. The purpose of this Study Section is to promote, develop and coordinate research in the field of environmental health and to review applications for research grants.

It can be seen from the organization and operation of the research grants plan that the promotion and control of the entire program is in the hands of a large number of experts in the fields of medical and allied research who are not connected with the Federal government. Everything has been done in the organization and direction of the program to insure the integrity and

independence of the research worker and to prevent any regimentation, direction or control by outside interference.

As authorized by Section 301, research projects related to environmental health, including water purification, sewage treatment, milk and food, air pollution, etc., are eligible for grants-in-aid. The National Advisory Health Council has established a policy requiring all approved projects in this broad field to be of a fundamental or basic character. The Council has decided in all cases where such requests were made that testing station or experimental plant type research, which might be needed to develop a process for practical application on a large scale, were not eligible for National Institutes of Health research grants.

According to the law, universities, hospitals, laboratories, or other public or private institutions and individuals are eligible for grants-in-aid. The Research Grants Division, however, encourages individual applicants to affiliate with universities or institutions. This affiliation facilitates the administration of grants, provides the research worker with better facilities and relieves him of responsibility for bookkeeping and auditing. Although there is nothing in the law to prevent a manufacturing company, corporation, or other institution organized for profit, from applying for a grant-in-aid in the field of environmental health, the National Advisory Health Council has been very hesitant to authorize such grants. In one instance where a company processing a new material asked for a grant-in-aid to

make laboratory studies on the characteristics and possibilities of treatment of its industrial waste to prevent possible serious stream pollution conditions, the project, although a worthwhile one, was disapproved.

The application for a grant must be made on forms available from the Chief, Research Grants and Fellowships Division, National Institutes of Health, Bethesda 14, Maryland. Applications made in the name of a university, or other organization, should be signed by an administrative official, such as the dean or the president, in order that administrative approval be indicated. The department head, professor, or research director familiar with the work of the applicant is requested to submit a letter giving a valuation of the research project and of the investigator. The treasurer, bursar, or comptroller of the institution should be named as payee. Applications may be submitted at any time. However, to be considered at an approaching Study Section meeting they must be received by the Division at least a month in advance of the date of the Study Section meeting. The Study Sections hold their meetings three times yearly and these meetings are usually a week or more in advance of the meetings of the National Advisory Health Council.

In an application funds may be requested for personnel, permanent equipment, consumable supplies, travel and miscellaneous items. An overhead charge of 8 per cent is permitted to the institution. The explanation and proposed plan for the project

is important and should be carefully written. The title of the project should be as specific as possible. The plan should include an explanation of the specific aims, the method of procedure, the facilities that are available, and the relationship of the anticipated results to problems in the field. Many projects have been disapproved or returned for revision because their objects were not stated specifically, or because the explanation and description was not clearly presented.

A discussion of the results that have been obtained in the line of research to date by the applicant and others working in this field should be included. This review is very important because it indicates to the members of the Study Section and the National Advisory Health Council the extent to which the investigator is acquainted in the field and the possibility of the development of new and useful information by him. If questions regarding the project arise, it is the prerogative of the executive secretary of the Study Section to write the applicant and obtain a clarification. If an application falls in the field of two Study Sections, or in the field of some investigator who is well known, the application may be submitted to outside experts for review before it is reviewed by the Study Sections concerned. All applications received by the Division of Research Grants and Fellowships are reviewed by a special Study Section and by the National Advisory Health Council.

When applications are received by the Division they are duplicated and a decision is made by the executive secretaries as to the Study Section to which each should be referred. The applications are then distributed to each member of the selected Study Section. Study Section members review the application and return a report form to the secretary indicating their appraisal. Any member of the Study Section desiring further information may ask the executive secretary to write the applicant, or by arrangement with the Study Section chairman, may visit the project site to make an inspection and direct inquiries.

At each meeting of the Study Section all applications received since the previous meetings are formally considered. Usually a summary of the appraisal of the members based upon the reports is made by the subcommittee chairman and an open discussion on each project is held by the members. On the basis of this consideration a formal motion is made to approve, disapprove, or defer the project for further investigation. The Section at this time may authorize a project site visit by a member to clear up questions which have arisen during the discussion on projects that are deferred. The reasons for the action taken on each project are included in a report to the National Advisory Health Council. The action taken by the Study Section is not reported to the applicant because the final decision is made at a subsequent meeting of the National Advisory Health Council. After the project is considered by

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the National Advisory Health Council the applicant is notified of the decision by the Research Grants Division and if approved, payment is made on the basis of established priorities.

It may be of interest to consider briefly some of the difficulties that have been noted by the Study Section in reviewing applications for the past three years. The first and fairly common difficulty is the lack of clarity in the plan and description of the project. As stated above, a plan should be carefully developed and described if a favorable reaction is to be expected. High cost of permanent equipment or alterations in laboratory facilities is a second difficulty that has been observed. The project which has an unusually high cost for permanent equipment above that which normally would be expected is much less likely to receive favorable consideration. One should not expect expensive alterations of permanent laboratory facilities incidental to a relatively small grant-in-aid project. Some requests have suggested that the project itself was somewhat incidental to the equipment that would be necessary in connection with its study. Such projects do not usually receive favorable consideration. Perhaps the most frequent difficulty encountered by the Environmental Health Study Section has been requests for the support of survey and experimental plant type research. As the Council has pursued the policy that such studies are not eligible for

grants, they have always been disapproved. It should be realized that in most cases survey studies of conditions, either in food processing practices, in the atmosphere, or in streams and lakes, are not fundamental studies and are usually of only local interest. Experimental plant studies in the field of environmental health are usually much more costly than fundamental studies. Consequently, the policy established certainly allows for the distribution of the funds to a larger number of research workers with the probability of obtaining more extensive information that has the possibility of having greater significance. Funds from other sources, such as trade associations, municipalities and States, can be obtained more easily for survey, development and experimental plant studies. In preparing the application for a grant, therefore, be sure that the study is basic, that the plan is clearly stated, and that the cost is not excessive. Naturally the project must qualify under Section 301 which has been quoted earlier and its public health significance should be evident.

The Environmental Health Study Section has considered 127 environmental health project applications to July 1948. Of these, 62 applications for $553,646. have been approved by the National Advisory Health Council. This represents 49 per cent approval for environmental health study projects. This is contrasted with 72 per cent approval of the projects on the overall program. A summary of the research grants awarded through the National

Institutes of Health has recently been prepared by Price (2). This publication lists 37 projects in the field of environmental health. Some of these have been supported for two years and one had been supported for three years. The total amount expended in support of these projects was $435,521.00. Since May 1949, 45 projects in the field of environmental health have been approved. The cost of 35 of these projects totaling $242,000.00 is currently being paid. Allotments for the other 1[illegible] projects totaling $93,381.00, which have been approved, are not being paid to this time because money for their payment is not available. These ten projects are among the more than 150 of the Division of Research Grants and Fellowships which have been approved by the National Advisory Health Council for which funds are not currently available. It is expected that unexpended balances for the 1949 fiscal year grants will permit payment of a good portion of these unpaid applications. These presently unpaid projects will be paid in accordance with the priority listing established by the Study Section last June.

The Division of Research Grants and Fellowships through the Environmental Health Study Section has sponsored three symposia. One of these has been on research in the field of milk and food. The other two have been on research in the field of water, sewage and industrial wastes. The last symposium on water,

sewage and industrial wastes was held in Washington in June of this year. At this symposium, 20 research papers were presented by investigators supported by research grants, and 10 additional papers were presented by outstanding investigators from other private and public organizations. These symposia are open to the general public without charge and have been very well attended. It is felt that they do a great deal to aid in the dissemination of new information, and stimulate research to a considerable extent by the early exchange of such information among the workers in the field.

In concluding, it should be stated that there is a decided need for additional projects in the field of environmental health. A number of the present projects will be terminated by the end of the current fiscal year and it is the desire of the members of the Environmental Health Study Section that research in the field of environmental health be continued and expanded with a number of new important projects. Additional information relative to the Research Grants and Fellowships Program may be obtained by writing to Medical Director David E. Price, Chief, Division of Research Grants and Fellowships, National Institutes of Health, Bethesda 14, Maryland.

REFERENCES

(1) Van Slyke, C. J. "New Horizons on Medical Research". Science, Vol. 104, No. 2711, p. 559 (1946).

(2) Price, David E. "Research Grants and Fellowships Awarded Through the National Institutes of Health by the Public Health Service". Supplement 205, Public Health Reports, (1949).

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